

WHAT IS CLAIMED IS:

1. A projector optical system comprising:

a digital micromirror device for modulating illumination light, the digital micromirror device including minute mirror elements with variable light-reflecting directions, the minute mirror elements being arranged regularly within a plane so as to correspond to respective pixels of an image, each minute mirror element switching, according to a video signal fed therein, between two states having respective angles of rotation different from each other so as to selectively reflect the illumination light into one of first and second directions;

an illumination optical system for illuminating the digital micromirror device with a luminous flux having a uniform polarization direction;

a projection optical system for projecting onto a predetermined projection surface the luminous flux modulated by the digital micromirror device; and

luminous flux separating means for making light from the illumination optical system incident on the digital micromirror device and guiding to the projection optical system the illumination light modulated by the digital micromirror device and emitted in the first direction;

wherein the luminous flux separating means has a polarization separating surface for separating a luminous flux incident on the digital micromirror device and a luminous flux emitted from the digital micromirror device from each other; and

wherein polarization direction rotating means for rotating a polarization direction is disposed between the polarization separating surface and the digital micromirror device.

2. A projector optical system according to claim 1, wherein the luminous flux separating means is a prism member.

3. A projector optical system according to claim 1, wherein the polarization direction rotating means comprises a quarter-wave plate.

4. A projector optical system according to claim 1, wherein the projection optical system is an optical system telecentric on a reducing magnification

side.

5. A projector optical system according to claim 1, wherein the polarization separating surface reflects S-polarized light incident thereon from the illumination optical system toward the digital micromirror device and transmits therethrough toward the projection optical system P-polarized light outputted from the polarization direction rotating means after being reflected in the first direction by the digital micromirror device.

6. A projector apparatus comprising the projector optical system according to claim 1.